Security Lab SWS1 – Using Virtual Machines in the InIT Cloud

1 Introduction

For the labs, virtual machines (VMs) are provided that are hosted on the computing infrastructure of the Institute of Applied Information Technology (InIT) – the InIT Cloud. These VMs can easily be used via web browser.

The VMs are accessible at *https://sec.cloudlab.zhaw.ch* and you get access with your ZHAW credentials (for the username, use your ZHAW username and not the e-mail address).

Each student has access to two VMs:

- The one with *-hl-* in the name gives you access to the VM that is used for the security labs based on the Hacking-Lab.
- The one with *-ubuntu-* in the name gives you access to the Ubuntu VM that is used for the other security labs.

When you are accessing the VMs for the first time, they will be initialized, which may take some time.

Usage policy: Note that the VMs are only intended to be used in the context of module SWS1. Any abuse such as scanning or attacking systems that are not explicitly mentioned in the lab assignments or trying to access or attack the VMs of other students is strictly forbidden. Also, please don't create unnecessary computing or network workload, and don't update the VMs as the labs have only been tested with the current version of the VMs. Finally, please note that this is a best-effort service. This means that - although unlikely – a VM may suddenly not work anymore. In this case, you'll get a new VM, but all data stored in the previously used VM will likely be lost. Therefore, please make sure to store relevant data also outside of the VMs periodically.

2 Usage

Browser support

The service was tested with Firefox, Chrome and Safari. We cannot make any statements about other browsers. All three browsers work well, aside from the copy/paste limitation with Safari (see below).

Clipboard support

The copy/paste function between your host system and the VM is implemented using the *Asynchronous Clipboard API*. Chrome enables this feature by default. In Firefox you need to enable this feature by navigating to *about:config* and setting the following settings to *true*:

- *dom.events.testing.asyncClipboard*
- *dom.events.asyncClipboard.readText*
- *dom.events.asyncClipboard.clipboardItem*

Safari supports the *Async Clipboard API* since Safari 13.1. However, during our testing, we observed some issues. In case this feature works in your case: Please report this to the instructor so we can all profit from it.

As a fallback, you can always use the clipboard in the sidebar (see below) to copy/paste data between your local computer and the VM.

Sidebar and settings

By pressing *Ctrl+Shift+Alt* (or *Ctrl+Shift+Cmd* on a Mac), a sidebar will open on the left side. There you can manipulate your remote clipboard, upload and download files to and from your VM, and select input methods for touch screens. The resolution of your VM should adapt to your browser size. If this is not the case, please make sure to check the box to enable this feature at the bottom of the sidebar. A reload of the open tab might also help.

File exchange

File exchange between the host system and the VM is handled by a shared drive named *SharedDrive* mounted in your VM.

To copy a file from the host systems to the VM, simply drag the file into the VM. In the VM, the file is then available in the drive *SharedDrive*, in directory *GUACFS*. Alternatively, you can use the *Upload Files* button under *Shared Drive* in the sidebar.

To copy a file from the VM to the host system, you must first copy it to the drive *SharedDrive*, into directory *GUACFS*. Then, under *Shared Drive* in the sidebar, you can double-click the file to download it to the host system.

Using multiple VMs

You can concurrently open multiple VMs by clicking on the name of your VM in the upper left corner of the sidebar and enable the checkboxes accordingly. Most likely, however, you won't need this feature.

Reboot and Shutdown

Just **leave your VMs running at all times**. You can reboot a VM if needed. However, if you shut it down instead if rebooting it, you'll no longer have access to is. If your VM is no longer running, please contact your instructor.

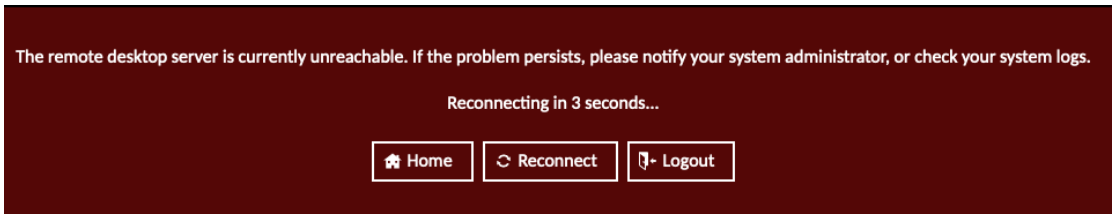
3 Credentials

Occasionally, you have to use the usernames and passwords of the user accounts in the VMs:

- Ubuntu VM: username *user*, password *user*; the root password is *root*
- Hacking-Lab VM: username *hacker*, password *compass*

4 Possible Problems

Problem: No connection to the VM can be established:



Solution: Contact your instructor.